

**WHAT IS CLAIMED IS:**

- 1           1.     A lighting system for a display, comprising:  
2                     a light source providing invisible light having a wavelength in  
3     a spectrum not visible to the human eye;  
4                     a reflective layer having at least one of a phosphorescent and  
5     a fluorescent surface reflecting the invisible light from the light source and  
6     converting the invisible light into visible light visible to the human eye;  
7     and  
8                     a display layer in which pixels of the display layer may be  
9     altered by applying an electrical charge to the display layer in a controlled  
10    manner, the display layer being illuminated by the visible light from the  
11    reflective layer.
- 1           2.     The lighting system of claim 1, wherein the light source  
2     includes a light guide.
- 1           3.     The lighting system of claim 1, wherein the light source is  
2     provided above the display layer.
- 1           4.     The lighting system of claim 1, wherein the light source is  
2     provided below the display layer.
- 1           5.     The lighting system of claim 1, wherein the reflective layer  
2     includes phosphorescent coatings on a substrate.
- 1           6.     The lighting system of claim 1, wherein reflective layer  
2     includes metallized coatings on a substrate.
- 1           7.     The lighting system of claim 1, wherein the reflective layer  
2     includes fluorescent coatings on a substrate.

1           8.     The lighting system of claim 1, wherein the light source  
2 includes a light emitting diode (LED).

1           9.     The lighting system of claim 1, wherein the light source  
2 provides at least one of ultraviolet (UV) light and infrared (IR) light.

1           10.    A method of producing an image on a display;  
2                generating a source of invisible light, the light having a  
3 wavelength in a spectrum not visible to the human eye;  
4                distributing the invisible light over the surface of a reflective  
5 layer, the reflective layer including at least one of a phosphorescent and a  
6 fluorescent surface;  
7                reflecting the invisible light from the light source by the  
8 reflective layer;  
9                converting the invisible light into visible light visible to the  
10 human eye; and  
11               illuminating a display element with the visible light, the  
12 display element including individually selectable pixel elements.

1           11.    The method of claim 10, wherein the source of light includes  
2 a light emitting diode (LED).

1           12.    The method of claim 10, wherein the invisible light includes  
2 light having wavelengths in the ultraviolet (UV) spectrum.

1           13.    The method of claim 10, wherein the invisible light includes  
2 light having wavelengths in the infrared (IR) spectrum.

1           14.    The method of claim 10, wherein the reflective layer includes  
2 a metallized surface.

1           15.    The method of claim 10, wherein the display element is a  
2   liquid crystal display element.

1           16.    The method of claim 10, wherein the display element is an  
2   electronic paper (e-paper) display element.

1           17.    A display system, comprising:  
2                   a light source providing invisible light having a wavelength in  
3   a spectrum not visible to the human eye;  
4                   a light guide, dispersing the invisible light over a defined  
5   region;  
6                   a light converter, converting the invisible light to light having  
7   a wavelength visible to the human eye; and  
8                   a liquid crystal display layer receiving and transmitting the  
9   visible light.

1           18.    The display system of claim 17, wherein the light guide  
2   overlays the liquid crystal display.

1           19.    The display system of claim 17, wherein the liquid crystal  
2   display overlays the light guide.

1           20.    The display system of claim 17, wherein the light converter  
2   includes phosphorescent coatings on a substrate.

1           21.    The display system of claim 20, wherein the light converter  
2   includes metallized coatings on the substrate.

1           22.    The display system of claim 17, wherein the light converter  
2   includes fluorescent coatings on a substrate.

1           23.    The display system of claim 23, wherein the light converter  
2   includes metallized coatings on the substrate.

1           24.    The display system of claim 17, wherein the light source and  
2   light guide combine to form a front lighting system.

1           25.    The display system of claim 17, wherein the light source and  
2   light guide combine to form a back lighting system.

1           26.    The display system of claim 17, wherein the light source  
2   includes a light emitting diode (LED).

1           27.    The display system of claim 17, wherein the light source  
2   provides at least one of ultraviolet (UV) light and infrared (IR) light.

FOOTNOTES